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ABSTRACT

The effectiveness of using the Perry Scheme of Intellectual and Ethical Development (PSIED) was assessed with vocationally undecided students. Erwin's 1981 Scale of Intellectual Development (SID) was administered to 290 vocationally undecided college students (131 males and 156 females ranging aged 17 to 42 years with a mean age of 20.2 years) at a large midwestern university. The SID was administered to the students at the beginning and end of a 1-semester career planning course. Students also completed My Vocational Situation (MVS), the Career Development Inventory (CDI), and the IPAT Anxiety Scale (IPATAS). The responses to each instrument were cross-analyzed to identify correlations between the SID and the MVS, CDI, and IPATAS. Correlations were presented with respect to career planning, career exploration, decision making, world of work information, preferred occupation, career development attitudes and knowledge, and total career orientation. The various instruments were also cross-correlated in terms of dualism, relativism, commitment, empathy, and covert and overt anxiety. The study confirmed that the PSIED can assist career counselors in discovering diversity in vocationally undecided students. Specific conclusions were also drawn regarding the validity of selected scales of the individual measures. (MN)

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A Mosaic of Diversity: Vocationally Undecided Students and the Perry Scheme of Intellectual and Ethical Development

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Abstract

The Perry Scheme of Intellectual Development can assist a counselor in the discovery of diversity in vocationally undecided students. Students in a career planning class took an instrument to measure the Perry Scheme, the Scale of Intellectual Development, as well as The Career Development Inventory, My Vocational Situation, and the IPAT Anxiety Scale. Information has been provided by the Scale of Intellectual Development on this population, and the subscale of dualism appeared to have the highest validity. The commitment subscale provided additonal pieces of the mosaic of diversity, as did data about the relationships between the instruments.

A Mosaic of Diversity: Vocationally Undecided Students and the Perry Scheme of Intellectual and Ethical Development

The job of an artist in making a large mosaic of intricate design through the assemblage of small pieces of glass, can be compared to that of the vocational counselor dealing with undecided college students. Each piece of glass reflects light differently. Some are very opaque and resist the entrance of light entirely while others are very transparent and permit the light to penetrate easily, but the artist must take into account all these differences to construct the large unified picture. Vocationally undecided students also look at the world as through different colors of glass. The students have many properties in common, and yet some students have been known to resist the clarity of vision that knowledge of self and vocational choices can provide. It is the vocational counselor's role to discover the diversities and to provide the framework which will give the students the ability to see how all the pieces fit together and their place in the larger picture. Perry's (1970) scheme can be an asset to the counselor, researcher, and student in achieving this goal.

The Perry Scheme of the Intellectual and Ethical Development in the College Years

Perry's (1970) Scheme of the Intellectual and Ethical Development in the College Years addressed the need to extend Piaget's (1972) developmental theory into the period between adolescence and adulthood. To place students into their approximate

positions of intellectual development, Perry used an interview technique. This process was time consuming and required trained raters. Other researchers tried to measure it using paragraph completion questions or a sentence stem format. Erwin (1981), however, attempted to measure the scheme using a multiple choice format in a Scale of Intellectual Development.

Knefelkamp and Slepitza (1976) used Perry's scheme to describe the cognitive complexity in views and issues of career decision making. Neimeyer, Nevill, Probert, and Fukuyama (1985) suggested that cognitive structure may be more related to the process involved in career planning or decision-making and that individuals may react differently to the same vocational interventions based on their cognitive levels of differentiation and integration.

Perry's (1970) scheme placed students in nine positions of development, but these were later reduced to the four that Erwin's SID (1981) attempted to measure. Erwin, when using factor analysis in the development of the instrument, found four factors and three of them followed Perry's original scheme: (a) dualism, (b) relativism, and (c) commitment. The other factor did not fit Perry's fourth position of multiplicity and Erwin suggested it as a higher developmental level called empathy.

A student with a high score in the first position of the scheme, dualism, would be expected to believe that only one path led to problem solution and that a problem had one right solution. Authority figures were expected to provide answers and "the truth".

The vocationally undecided freshman has been described as anxious, as having an external locus of control and greater dependency needs, and has appeared to fit into the dualistic position.

Multiplicity modified dualism (Perry, 1981). Students became aware of the multiple solutions possible, but were not aware that judgments could be made among them. It was implied that one solution was as good as another. This position was hypothesized as indicating a higher level of career maturity, especially in career exploration. Multiplicity was not measured by Erwin's SID (1981).

In the position of relativism, students were expected to find several correct solutions and several possible paths to problem solution. These solutions could be compared, evaluated, and judged. Perry (1981) suggested that the position of relativism was a gateway or hurdle to be overcome. This would indicate a still higher level of career maturity.

Commitment, which evolved from the position of relativism, was expected to indicate vocational decidedness in a student, a lessening of anxiety, and a still higher level of career maturity.

While empathy was not one of Perry's (1970) positions but rather one that evolved through Erwin's (1981) factor analysis, a student with a high score in empathy was expected to have developed sensitivity to other people, to have become aware of the impact made on others, and to feel responsible for the improvement of society according to Erwin (1983). This student was expected to have made the major life decisions.

Erwin's (1981) Scale of Intellectual Development

Erwin's (1981) Scale of Intellectual Development (SID) was administered to college students at the beginning and end of a one semester career planning course at a large midwestern university (Jones, 1992). The students also completed a questionnaire, My Vocational Situation (Holland, Daiger, & Power, 1980) the Career Development Inventory (Thompson, Lindeman, Super, Jordaan, & Myers, 1981) and the IPAT Anxiety Scale (Krug, Scheier, & Cattell, 1976) at the beginning of the course. The results of the study are presented in this paper.

The Sample

This sample for the study consisted of 290 students who had elected to take a career planning course at a large midwestern university. The students ranged in age from 17 to 42 with a mean of 20.2 years. There were 131 males and 156 females. Freshmen numbered 207, sophomores 51, juniors 7, and seniors 11.

The mean scores of the SID scales were different in the current study than in Erwin's (1983) study of 3,321 entering college freshmen. The means are presented in Table 1 (p. 7). The means appear to vary in the direction that would be expected for vocationally undecided students. Means are given for Erwin's original study, (1981), Erwin's (1986) four year follow-up study, and the pre and post course scores for the current study (Jones, 1992).

Table 1

Population Means on the Scale of Intellectual Development

	Dualism		Relativism		Commitment		Empathy		
	M	SD	M	SD	M	SD	M	SD	N
1981	100.0	17.0	78.0	9.5	145.0	11.0	82.0	10.0	3,321
fr. yr.	78.1	13.3	63.4	10.2	126.0	12.2	66.6	9.0	120
sr. yr.	68.7	12.4	63.6	9.2	131.8	11.4	67.9	8.4	120
1992									
pre	122.5	18.3	52.6	8.6	77.4	11.9	60.0	9.9	255
post	121.6	19.4	55.1	8.3	73.5	11.2	60.7	9.3	204

Discriminant Analysis

In the current study, several hypotheses were formed and tested. The first expected freshmen to score differently on the SID scales than seniors and looked at the criterion validity of known groups (age and year in school) on the SID. Because of the unequal numbers of students in these two categories, 54 freshmen were randomly selected for the study so that the ratio did not exceed 5 to 1. A discriminant analysis was done with the subscales of the SID, covaried with sex and anxiety, against the dependent variable of student year in school (freshman or senior). All hypotheses were found not to be significant at the .05 level of significance. Criterion validity was not supported by this analysis.

Since it was an ex post facto study results cannot demonstrate causation, but the results suggest that undecided students may be similiar in intellectual development level as measured by Erwin (1981) which is not correlated to their year in college. Self-selection

into the course was not controlled, therefore the study has self-selection as a limitation. The students in this population scored very differently than did the students in Erwin's study (see Table 1, p. 7) but, again, other factors could account for this difference such as age, geographic area, and undecidedness.

Analysis of Co-variance

The second group of hypotheses predicted younger students would score differently than older students on the SID scales. An analysis of covariance was calculated to see if the SID scores would predict age over and above sex and anxiety. The relativism scale accounted for unique variance in predicting student age, but the effect size (f^2) was low ($f^2 = .01$). Older students scored significantly higher in relativism which was predicted because of their broader experiences, but other explanations need to be considered. This sample was unique in that all the students chose to be in the career planning course, and older students who made this choice may not be similar to the general population of older students. The same concept may be true for the younger students.

Commitment accounted for unique variance over and above sex and anxiety in predicting age, but the results were in the opposite direction of what had been predicted. Younger students scored higher in commitment, and older students lower. While criterion validity was not supported by results opposite those predicted, these results could be explained by the self-selection into the career planning course. When observing the data collected after all analyses

were completed, it appeared that some of the younger students may have made unreasoned commitments. These unreasoned commitments may have been discarded by older students as their knowledge about vocations and their reasoning ability increased, and this could also account for the results.

Table 2

t - Tests of Differences Between Age Groups

	N	Adj. Mean	SD	df	Probability	Sign.
Age Group 1	78	81.8	12.4			
Age Group 2	87	78.9	10.9	163.0	0.1064	NS
Age Group 1	78	81.8	12.4			
Age Group 3	52	74.5	11.2	128.0	0.0009	S
Age Group 1	78	81.8	12.4			
Age Group 4	19	69.9	8.6	95.0	0.0001	S
Age Group 1	78	81.8	12.4			
Age Group 5	18	68.1	9.6	94.0	0.0001	S
Age Group 2	87	78.9	10.9			
Age Group 3	52	74.5	11.2	137.0	0.0263	NS
Age Group 2	87	78.9	10.9			
Age Group 4	19	69.9	8.6	104.0	0.0011	S
Age Group 2	87	78.9	10.9			
Age Group 5	18	68.1	9.6	103.0	0.0002	S
Age Group 3	52	74.5	11.2			
Age Group 4	19	69.9	8.6	69.0	0.1077	NS
Age Group 3	52	74.5	11.2			
Age Group 5	18	68.1	9.6	68.0	0.0323	NS
Age Group 4	19	69.9	8.6			
Age Group 5	18	68.1	9.6	35.0	0.5419	NS

Corrected = .005

F-Tests

Additional analyses were run on the age differences. For these analyses, students were divided into five age groups: (a) 17-18, (b)19, (c) 20-21, (d) 22-25, and (e) 26 and over. F tests were calculated to determine if student ages were significantly related to the scales of the SID. The results indicated that there was a significant difference between the age groups in commitment and t tests were computed for additional ad hoc analysis. Other F tests on the SID scales of dualism, relativism, and empathy were insignificant at the .05 level. The results of the t tests for the commitment scale are presented in Table 2 on page 9.

Repeated Measures Dependent t Test

Looking at vocationally undecided students scores on the SID at the beginning and end of a career guidance course, resulted in the identification of some significant changes. Dualism scores dropped significantly ($p < .0008$) as hypothesized when class and instructor were covaried. This finding supported the predictive validity estimate for the dualism scale of the SID. Commitment scores were significantly lower instead of higher as had been predicted. One of the reasons mentioned earlier, that it was the unreasoned commitments that declined, may account for the result. It may also be that the lowering of dualism scores from the application of learnings in the course accounted for the change in commitment scores (students altered their thinking that only one right career existed for them), or other reasons not under the control of the researcher.

Table 3

SID and MVS Correlations

Pre-Career Planning	Dualism	Relativism	Commitment	Empathy
MVS Vocational Identity	+.036	+.228*	-.456**	+.015
MVS Barriers	+.098	+.001	-.151*	-.001
MVS Information	+.053	+.161*	-.070	+.065

* p< .05 **p< .0001

Dualism was found not to be significantly related to scores on the MVS scales, nor was empathy. Relativism, however, was significantly and positively related to the Vocational Identity Scale (MVS-VIS) as it was to the Information scale (MVS-IF) but the correlations were low. In a regression analysis the results were similar. The relativism scale was significantly related to the MVS-VIS (p< .01) and to the MVS-IF (p< .03) when sex and anxiety were covaried. A significant relationship (p< .01) was also found between the relativism scores and the IPAT Anxiety Scale (IPATAS) when sex was covaried. The relativism scale did not have a significant relationship with any of the CDI scales when sex and anxiety were controlled.

The SID commitment scale, in the regression analysis, showed a significant relationship to the MVS-VIS (p< .01) when sex and anxiety were covaried. The commitment scale was significantly related to the Barrier Scale (MVS-B) when covaried for sex (p< . 05), but not when covaried for anxiety. The same relationship was found in the correlation matrix (MVS-VIS: r= -.456, p< .0001; MVS-B: r= -.151,

$p < .05$). Commitment and the IPATAS also showed a significant relationship when controlling for sex ($p < .01$).

High scores on the scales of the MVS indicate career maturity. Low scores in vocational identity appear to be significantly correlated with high scores in commitment and this appears to support the possibility that vocationally undecided or uncertain students who score high in commitment on the SID do not have a clear idea of their own attributes or did not go through the process of vocational planning.

Students tending to have high scores in commitment and low scores on the barrier scale, may indicate students in career planning courses who are committed to a major or career but are aware of barriers to this course of action and may be looking for other alternatives. The relationship of high anxiety scores to high commitment scores could further suggest that students in career planning courses are anxious if they already have made a commitment to to a career or course of study but recognize possible problems with their choice.

These combinations of scores may also suggest that the commitment scale may be measuring an unreasoned commitment rather that Perry's (1970) definition of commitment. The commitment scores were significantly and negatively related to all the scales of the Career Development Inventory (CDI) except for the knowledge of perferred information scale ($r = -.103$) which was negatively related but not with significance at the .05 significance

level (see table 4, p. 13). This correlation analysis further supports the reason vs unreasoned commitment interpretation.

In the multiple regression analysis, commitment was also significantly related to all the scales of the CDI, except for knowledge of preferred occupation when controlling for sex and anxiety. Commitment was also found to be nonsignificantly related to decision making when sex was covaried.

Table 4

CDI and SID Correlations

Pre-Career Planning	Dualism	Relativism	Commitment	Empathy
Career Planning	-.015	+.088	-.405**	-.102
Career Exploration	-.004	-.004	-.257**	-.114
Decision Making	+.305**	-.092	-.138*	-.138*
World of Work Inf.	+.342**	-.077	-.181*	-.151*
Preferred Occupation	+.163*	+.070	-.103	-.020
Career Dev. Attitudes	-.001	+.062	-.427**	-.126*
Career Dev. Knowledge	+.391**	-.095	-.175*	-.171*
Career Orientation Total	+.274**	-.028	-.412**	-.212*

* $p < .05$ ** $p < .0001$

In addition to the correlations between the SID scales and the MVS, CDI, and IPATAS, the correlations between the vocational instruments are reported in Table 5 on page 14. These correlations further discribe the mosaic of diversity.

Anxiety was found to be nonsignificantly correlated with the CDI scales except for the career development attitude scale ($r = -.122$, $p < .05$) which is a combination of career planning and career exploration. This relationship suggests that activity in both career planning and career exploration may reduce student anxiety. However, the MVS

scales were found to be significantly and negatively correlated with the IPATAS scales (see Table 6 on page 14).

Table 5

Correlations Between MVS and CDI

CDI Scales	MVS Vocational Identity	Barriers	Information Scales
Career Planning	+.422**	+.027	+.217*
Career Exploration	+.194*	-.035	+.103
Decisionmaking	+.018	+.043	-.076
World of Work	-.046	+.081	+.069
Knowledge Pref. Occ.	+.063	+.109	-.003
Attitude	+.406**	+.012	-.212*
Knowledge	-.022	+.070	-.012
Career Maturity Total	+.257**	+.063	+.134*

* p< .05 **p< .0001

Table 6

Correlations Between MVS and IPATAS

IPATAnxiety	Covert Anxiety (A)	Overt Anxiety (B)	Total
MVS Vocational Identity	-.194*	-.274*	-.261**
MVS Barriers	-.186*	-.225*	-.227*
MVS Information	-.150*	-.159*	-.173*

* p< .05 **p< .0001

These correlations between the MVS and anxiety, suggest construct validity for the MVS. Research has suggested that there is a relationship between anxiety and vocational maturity are in undecided college students, and the correlations were in the expected negative direction (high anxiety and low vocational maturity).

Conclusions

1. Students taking the career planning course appeared to be dualistic as had been predicted, and the Dualism Scale of the SID may be the most accurate measure of the Perry Scheme by the SID for this population. It appears sensitive to changes and correlates in the hypothesized direction with other instruments. While looking at correlations with the other instruments, dualism as measured by the SID may reflect Perry's early research on the authoritarian personality and dogmatism.

2. The Relativism Scale of the SID may be in need of expansion or revision to make it more sensitive to changes over time and differences in the student population. It did not significantly change in Erwin's 1986 four year study and it did not show a significant relationship to any of the CDI scales. It did, however, relate significantly to the MVS-VIS and MVS-IF in the direction expected for a relationship between the discovery of relativism and career information and identity. High vocational identity and information scores significantly correlated with high relativism scores.

3. The Commitment Scale appears to measure an unreasoned commitment, in this population, as well as or rather than the more limited reasoned commitment suggested by Perry (1970). This was suggested by the consistantly negative and significant correlations to the other vocational instruments. Unreasoned commitment could also be hypothesized by the significant and positive correlations to the anxiety measures. With reasoned commitment, it would have been

expected that anxiety scores would decrease. While the commitment scale did not appear to be a good measure of the Perry (1970) scheme for this reason, it did appear to give information about these vocationally undecided students over the semester career planning course. A decrease in commitment scores on the SID in this population over the semester may be hypothesized as a change for the better. This could be further demonstrated if anxiety scores decline with the commitment scores, and this additional research is needed. It may be wise to keep in mind, however, that this was a limited population and the mean score in commitment was already lower than in the Erwin (1983,1986) studies.

4. The inclusion of the empathy scale in an instrument to measure the Perry scheme has not been justified by Erwin (1983) or Jones (1992). In the various tests of significance done in this study, the empathy scale did not appear to add any significant information about the population. Even though this scale was developed through Erwin's (1983) factor analysis, It may be wise to keep in mind what Newman (1971) stated: "Just because a factor is produced by a factor analysis solution does not mean that that factor is meaningful" (p. 55). The data for this study (Jones, 1992), and Perry's (1970) research do not support Erwin's empathy subscale.

Implications

Heuristic findings of this study may be found in the correlation matrix indicating relationships between the findings. These results are inconsistent in that they impart support for expected

relationships as well as those that are contrary to theoretical expectations. The findings in this study bring to light needed research to explain the inconsistancies.

The mosaic that emerged from this analysis may be discriptive only of vocationally undecided students. These students may be a unique population, but they may be the most critical to understand because these are the students who most need or seek counseling.

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